

Abstract submitted to an Invited Seminar at:

Kings College London, Department of Geography, 1 Oct 2010

Address for correspondence:

Dr. Charles ICHOKU
Climate & Radiation Branch, Code 613.2
NASA/GSFC, Building 33, Room A315
Greenbelt, MD 20771, U.S.A.
Phone : (1) 301-614-6212
Fax : (1) 301-614-6307 or (1) 301-614-6420
E-mail : Charles.Ichoku@nasa.gov

Abstract Title:

Detailed Evaluation of MODIS Fire Radiative Power Measurements

Charles Ichoku

Climate & Radiation Branch, NASA/GSFC, Greenbelt, MD, USA.

ABSTRACT

Satellite remote sensing is providing us tremendous opportunities to measure the fire radiative energy (FRE) release rate or power (FRP) from open biomass burning, which affects many vegetated regions of the world on a seasonal basis. Knowledge of the biomass burning characteristics and emission source strengths of different (particulate and gaseous) smoke constituents is one of the principal ingredients upon which the assessment, modeling, and forecasting of their distribution and impacts depend. This knowledge can be gained through accurate measurement of FRP, which has been shown to have a direct relationship with the rates of biomass consumption and emissions of major smoke constituents. Over the last decade or so, FRP has been routinely measured from space by both the MODIS sensors aboard the polar orbiting Terra and Aqua satellites, and the SEVIRI sensor aboard the Meteosat Second Generation (MSG) geostationary satellite. During the last few years, FRP has been gaining recognition as an important parameter for facilitating the development of various scientific studies relating to the quantitative characterization of biomass burning and their emissions. Therefore, we are conducting a detailed analysis of the FRP products from MODIS to characterize the uncertainties associated with them, such as those due to the MODIS bow-tie effects and other factors, in order to establish their error budget for use in scientific research and applications. In this presentation, we will show preliminary results of the MODIS FRP data analysis, including comparisons with airborne measurements.